UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

MAY 17 2016

DATE:

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
American Electric Power (AEP)
Conesville Generating Station, Ohio

FROM: Ethan Chatfield, Environmental Engineer
AECAB IL/IN

THRU: Nathan Frank, Section Chief
AECAB IL/IN

TO: File

BASIC INFORMATION

Facility Name: AEP Conesville Generating Station

Facility Location: 47201 County Road 273, Conesville, Ohio 43811

Date of Inspection: April 5, 2016

Lead Inspector: Ethan Chatfield – EPA Environmental Engineer

Other Attendees:

1. Eleanor Kane – EPA Environmental Engineer
2. Beth Mullen – AEP Plant Environmental Coordinator
3. Michael Martin – AEP Operations Superintendent
4. Eric Lau – AEP Energy Production Team Leader
5. Greg Ruscak – AEP Continuous Emissions Monitor System (CEMS) Operator
6. Mike Zwick – AEP Conesville Plant Manager (joined late)

Purpose of Inspection: To determine compliance with opacity limitations and other Clean Air Act requirements.

Facility Type: Coal-fired electricity generating station

Regulations Central to Inspection: 1) Ohio SIP limit (OAC Rule 3745-17-07(A), visible emissions shall not exceed 20%, as a six minute average, except as provided by rule. 2) NSPS, 40 CFR Part 60.42(a)(2), visible particulate emissions shall not exceed 20% opacity as a six-

minute average, except for not more than 6 consecutive minutes in any 60 minutes, but shall not exceed 27 percent opacity, as a 6-minute average, at any time.

Arrival Time: 11:50 AM (arrived on site at 3:15 PM)
Departure Time: about 5:00 PM

Inspection Type:
☒ Unannounced Inspection
☐ Announced Inspection

OPENING CONFERENCE

☒ Credentials Presented
☒ CBI warning to facility provided

The following information was obtained verbally from unless otherwise noted.

Process Description: The Conesville Generating Station has approximately 225 employees and operates three coal boilers, Units 4, 5, and 6, constructed in the 1970s. Unit 4 is a 780 MW super critical boiler and Units 5 and 6 are identical, 400 MW 'sister units'.

Units 5 and 6 have a shared, shorter stack and still operate the original wet FGDs installed in the mid-1970s. The FGDs modules were upgraded in 2009 to 95% removal in accordance with the federal consent decree (though they usually operate in the 96% removal range). Each FGD has 2 scrubber modules. Units 5 and 6 both have low NOx burners and over-fired air for NOx control and an electrostatic precipitator for particulate control. Unit 4 has a newer jet bubbling reactor (JBR) and selective catalytic reduction system (SCR), both installed in 2009 to comply with the consent decree. Unit 4 is currently required to comply with the Mercury Air Toxics Rule (MATS) and Units 5 and 6 have obtained a compliance extension from Ohio EPA until April 30, 2016.

Units 5 and 6 have no SO_3 controls and Unit 4 has a Trona system. AEP is required to notify Ohio EPA if they exceed 9,128 lbs of sulfuric acid mist in a 24-hour period at Unit 4, or 16,757 lbs of sulfuric acid mist at Units 5/6 in accordance with a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requirement. AEP uses a sulfuric acid mist (H_2SO_4) model to predict H_2SO_4 emissions and is required to notify Ohio EPA's Emergency Response Center (Local Emergency Planning Committee) if they exceed their permitted emission limitations. AEP stated that they have conducted a stack test for SO_3 on Unit 4, but none for Units 5 and 6. EPA requested copy of any/all SO_3 or H_2SO_4 stack tests and Ms. Mullen agreed to provide via email. Unit 4 began conducting HCl and PM stack testing every quarter to comply with MATS. Unit 4 also is equipped with a mercury CEMS installed in accordance with MATS. Units 5/6 conducted PM testing in 2015. EPA requested a copy of the most recent stack tests also be sent via email. Method 9 readings are conducted during every PM stack test. When the JBR was installed on Unit 4, Ohio EPA required that AEP begin conducting daily Method 9 readings of Unit 4 emissions, as the new location of the COMS did not allow the unit to be properly certified. Plant personnel make three attempts each day to conduct Method 9 readings

on Unit 4, but often plume conditions (combining Units 4 and 5/6 plumes) prevent adequate readings. Readings are all conducted by trained in-house personnel, mostly CEMS technician(s) and a few operators. All readings are provided to State. Unit 4 still operates with the non-certified COMS unit and Units 5/6 have a certified COMS. None of the Units have any FGD or SCR bypasses.

Staff Interview: EPA inspectors entered the plant at approximately 3:15 PM after conducting visible emissions evaluations (Method 9) on the other side of the river.

Unit 5 was in the midst of a 79-day turbine and boiler reliability outage. No major capital work or tube section/panel replacements were being completed. Mostly padwelding, including 1,200 ft^2 padwelding of the lower waterwall. The last major outage was during the spring of 2015, which was primarily to install new mercury controls (see CBI Section in Attachment A) at Unit 6. The scope of the Unit 6 project was the same as the current Unit 5 outage.

EPA inspectors asked why there has been an increase in NOx emissions rate in recent years. Mr. Zwick, plant manager stated that to reduce costs and increase unit reliability they have begun increasing the amount of air in the OFA systems. This results in a decrease in tube wastage in and around the combustion chamber. AEP is attempting to avoid an up to 3,600 MW-hr penalty for inability to run during key required must-run periods. Mr. Zwick said they are changing excess air to maintain furnace safety and reliability. The Conesville plant, similar to the Gavin plant, has an internal emissions target for each unit that changes from year to year. Each unit has its own SO_2 and NOx CEMS to demonstrate CD compliance, but for Acid Rain reporting purposes there is a separate, combined SO_2 and NOx CEMS at combined stack 5/6.

The most recent Title V permit is from 1998 and OEPA is still very far behind on Title V permit renewal. AEP is waiting for a draft of the new Title V permit. AEP Corporate (Mark Runyon contact) handles permitting issues.

Ms. Mullen requested that any information requests be directed to her and Mark Runyon of their corporate office.

EPA toured the facility: EPA did not conduct a tour of the facility during the inspection.

Field Measurements: EPA Method 9 visible opacity observations were taken from an offsite location immediately prior to entering plant.

Requested documents:

1) Most recent week of Method 9 readings of Unit 4.
2) Any SO_3 or H_2SO_4 stack tests conducted on any of the stacks.

Concerns: Mr. Zwick asked about the reason for our visit and we informed them that we are concerned about the high opacity observed, likely sulfuric acid mist, noted prior to entering the plant and visible on numerous satellite images.

SIGNATURES

Lead Inspector: _____ Date: May 16, 2016

Section Chief: _____ Date: 5/17/16

APPENDICES

A: Confidential Business Information
B: EPA Method 9 Visible Emission Observation Form
C: CD of Photos taken of plume during VE Observations
D: AEP's Response to Requested Documents (provided post inspection via email)